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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,493	09/19/2003	Kuo-Tang Hsu	N1085-90162	8017
54657 7590 04/18/2007 DUANE MORRIS LLP IP DEPARTMENT (TSMC) 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103-4196			EXAMINER MACARTHUR, SYLVIA	
			ART UNIT 1763	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/18/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No. 10/666,493	Applicant(s) HSU ET AL.	
	Examiner Sylvia R. MacArthur	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-17 and 29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-17, and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/23/2006 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 5-9, filed 2/1/2007, with respect to the prior art to Jeong and the modification of Jeong with Shindo have been fully considered and are persuasive.

The previous rejections have been withdrawn.

2. The examiner has further noted that the pending claims are 1-9, 11-17, and 29.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5, 7, 8, 9, 11-14, 16, 17, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata et al (JP 10-022253).

Iwata et al teaches a tank 1, a drain opening on pipe 3, and a punching plate 5(interpreted as the regulating means) comprising slats and openings 6, see Fig. 1.

Regarding claims 1, 2, 12, and 29: The regulating means is disposed over the drain opening and controls the downward draining rate and the downward draining direction of the fluid. Iwata et al fails to specify that one of the slats covers the drain. This recitation is attributed to the size of the slats. The courts have held that where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed

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device is not patentably distinct from the prior art device. In re Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 US 830, 225 USPQ 232 (1984). The motivation to ensure that one of the slats covers the drain opening is that such a size of the slat is optimal and promotes optimal control of fluid flow. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide the wafer manufacturing apparatus of Iwata et al.

Regarding claims 3 and 13:

Iwata et al further teaches the use of DI water in the English Translation of the abstract.

Regarding claim 4: Section [0013] of Shinichi et al discusses a cassette.

Regarding claim 5: The punching plate 5 of Iwata et al divides the tank into a processing region (above the punching plate) and a draining region (below the punching plate).

Regarding claim 7: Iwata et al features holes 6.

Regarding claims 8 and 17: Iwata et al fails to teach that the wafers are oriented in the same direction as the slats and openings of the punching plate. However, the orientation of the wafers/cassette is interpreted as a rearrangement of parts and/or adjustment of the wafers/cassette in the tank. The courts have held that making the elements adjustable was held to have been obvious, see In re Stevens 101 USPQ 284 (CCPA 1954). Additionally, the courts have held that

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the rearrangement of parts which does not modify the operation of a device is *prima facie* obvious, *In re Japikse*, 181 F. 2d 1019, 86 USPQ 70 (CCPA 1950). *In re Kuhle*, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975). Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to adjust and/or rearrangement the orientation of the wafers/cassettes to obtain the optimal flow control.

Regarding claims 9 and 16: The prior art of Iwata et al with Sonoda et al fails to teach the range of angling between the plane of the regulating plate. The courts have held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. It would have been obvious to one having ordinary skill in the art to have determined the optimum values of the relevant process parameters through routine experimentation in the absence of a showing of criticality. *In re Aller*, 220 F. 2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Regarding claims 11 and 14: See Fig.1 wherein the inclining guiding plate 10 is integral with the punching plate 5. This reads on at least one slat (plate 10) is angled with respect to the plane of the regulating plate.

5. Claims 1-5, 7, 8, 12, 13, 17, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshiko (JP 04-099025).

Yoshiko teaches a tank 10, a drain opening on pipe 5, and a punching plate 9(interpreted as the regulating means) comprising slats and openings 11, see Fig. 1.

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Regarding claims 1, 2, 12, and 29: The regulating means is disposed over the drain opening and controls the downward draining rate and the downward draining direction of the fluid. Iwata et al fails to specify that one of the slats covers the drain. This recitation is attributed to the size of the slats. The courts have held that where the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device is not patentably distinct from the prior art device. In re Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed Cir. 1984), cert. denied, 469 US 830, 225 USPQ 232 (1984). The motivation to ensure that one of the slats covers the drain opening is that such a size of the slat is optimal and promotes optimal control of fluid flow. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to provide the wafer manufacturing apparatus of Yoshiko.

Regarding claims 3 and 13:

Yoshiko further teaches the use of DI water in the English Translation of the abstract.

Regarding claim 4: Section [0013] of Shinichi et al discusses a cassette (carrier 4).

Regarding claim 5: The punching plate 9 of Yoshiko divides the tank into a processing region (above the punching plate) and a draining region (below the punching plate).

Regarding claim 7: Yoshiko features holes 11.

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Regarding claims 8 and 17: Yoshiko fails to teach that the wafers are oriented in the same direction as the slats and openings of the punching plate. However, the orientation of the wafers/cassette is interpreted as a rearrangement of parts and/or adjustment of the wafers/cassette in the tank. The courts have held that making the elements adjustable was held to have been obvious, see *In re Stevens* 101 USPQ 284 (CCPA 1954). Additionally, the courts have held that the rearrangement of parts which does not modify the operation of a device is *prima facie* obvious, *In re Japikse*, 181 F. 2d 1019, 86 USPQ 70 (CCPA 1950). *In re Kuhle*, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975). Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to adjust and/or rearrangement the orientation of the wafers/cassettes to obtain the optimal flow control.

6. Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwata et al or Yoshiko in view of Shindo et al (US 5,845,660).

The teachings of Iwata et al or Yoshiko were discussed above.

Yoshiko or Iwata et al fails to teach that the regulating means is made of PEEK.

Shindo et al teaches a wet etching apparatus wherein the cassette 21 is made of PEEK in col. 7 lines 15-18. Shindo et al further details the properties of PEEK, determining that it is a suitable material of construction in the wet etching environment. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to construct the regulating means of Iwata et al or Yoshioko of PEEK.

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7. Claims 9, 11, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshiko in view of Sonoda et al (US 6,616,774).

The teachings of Yoshiko were discussed above.

Yoshiko fails to teach angling the slats with respect to the regulating plate.

Sonoda et al teaches a wet etching apparatus wherein a rectifying means has openings and angled rods (flow ports 24). See Fig. 1 and col. 4 lines 46-53. These rods are inclined with respect to the bottom of the tank 20. The motivation for one of ordinary skill in the art to combine the teachings of Yoshiko with the angled slats of Sonoda et al is that the inclining helps the contaminants to drain in a more controlled fashion and faster from the tank see col. 2 lines 45-63. Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to combine the teachings of Yoshiko in further view of Sonoda et al to angle the slats and openings of the regulating means to control the direction and rate of outlet flow.

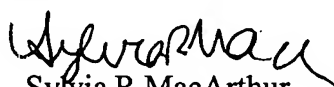
Regarding claims 9 and 16: The modification of I Yoshiko with Sonoda et al fails to teach the range of angling between the plane of the regulating plate. The courts have held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. It would have been obvious to one having ordinary skill in the art to have determined the optimum values of the relevant process parameters through routine experimentation in the absence of a showing of criticality. In re Aller, 220 F. 2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the hours of 8:30 a.m. and 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Sylvia R MacArthur
Patent Examiner
Art Unit 1763

April 16, 2007